

List of Claims:

1. (Previously Presented) A speech coding system for encoding a speech signal, the speech coding system comprising:

an encoder that determines a plurality of candidate pulse positions for encoding an excitation signal, wherein the plurality of candidate pulse positions are divided among a plurality of tracks; and

an algorithm for execution by the encoder;

wherein the algorithm is configured to assign a first fixed set of candidate pulse positions selected from the plurality of candidate pulse positions to a first track of the plurality of tracks if the algorithm determines that the speech signal is approximately periodic or to assign a second fixed set of candidate pulse positions selected from the plurality of candidate pulse positions to a second track of the plurality of tracks if the algorithm determines that the speech signal is approximately non-periodic;

wherein the algorithm is further configured to assign a dynamic set of candidate pulse positions selected from the plurality of candidate pulse positions to an additional track of the plurality of tracks, wherein the candidate pulse positions in the dynamic set of candidate pulse positions are defined relative to the candidate pulse positions in the assigned fixed set of candidate pulse positions.

2. (Previously Presented) The system according to claim 1, wherein the encoder includes a fixed codebook having a first sub-codebook for coding the periodic speech signal and a second sub-codebook for coding the non-periodic speech signal.

Claims 3-12 (Cancelled)

13. (Currently Amended) A speech coding system comprising:

a codec that includes an encoder and a decoder, the encoder determines candidate pulse positions to encode ~~an excitation~~ a speech signal, where the candidate pulse positions are divided into a plurality of tracks; and

an algorithm for execution by the encoder, the algorithm configured to select a first track of the plurality of tracks if the speech signal is approximately periodic and select a second track of the plurality of tracks if the speech signal is approximately non-periodic.

Claim 14 (Cancelled)

15. (Currently Amended) The system according to claim 14 where the algorithm determines a first fixed codebook if the speech signal ~~type~~ is approximately periodic and determines a second fixed codebook if the speech signal is non-periodic.

16. (Original) The system according to claim 15 where the first fixed codebook includes at least one track and the second fixed codebook includes at least one track.

17. (Currently Amended) A method for ~~dynamically coding a position of a pulsed a~~
speech signal in a speech coding system, comprising:

determining a candidate pulse positions, ~~of a first pulse on a first track of where~~
the candidate pulse positions are divided into a plurality of tracks; and

~~dynamically defining a second pulse position on a second track of the plurality of~~
~~tracks based on the position of the first pulse on the first track~~

selecting a first track of the plurality of tracks if the speech signal is
approximately periodic; and

selecting a second track of the plurality of tracks if the speech signal is
approximately non-periodic.

18. (Currently Amended) The method according to claim 17 further ~~including~~
comprising:

determining a first pulse position on the first track;

dynamically defining a second pulse position on the second track based on the
first pulse position;

defining ~~the~~ at least one additional candidate pulse position near the ~~determined~~
~~pulse position for the first pulse position.~~

19. (Currently Amended) A method for ~~dynamically coding a position of a pulsed signal~~
in coding a speech signal coding system, the method comprising:

determining candidate pulse positions, where the candidate pulse positions are
divided into a plurality of tracks;

selecting a first track of the plurality of tracks if the speech signal is
approximately periodic;

selecting a second track of the plurality of tracks if the speech signal is
approximately non-periodic;

determining a pitch prediction contribution from a past excitation signal;

determining positions of main peaks according to the pitch predication
contribution; and

constructing the candidate pulse positions for at least one dynamic track of a
current sub-frame according to the determined positions of the main peaks.

20. (Original) The method of claim 19 further including defining candidate positions of a
first pulse according to the constructed candidate pulse positions of the at least one dynamic
track.

21. (Original) The method according to claim 19 further including using a pitch
prediction contribution to derive positions of main peaks from a previously encoded signal.

22. (Previously Presented) The method according to claim 21 further including measuring energy to derive the main peaks.

23. (Previously Presented) The method according to claim 22 where the energy defines the main peaks at the positions of the pitch prediction contribution including the highest energies.

24. (Previously Presented) A speech coding system for encoding a speech signal, the speech coding system comprising:

an encoder that determines a plurality of candidate pulse positions for encoding an excitation signal, wherein the plurality of candidate pulse positions are divided among a plurality of tracks; and

an algorithm for execution by the encoder;

wherein the algorithm is configured to determine a first pulse position from the plurality of candidate pulse positions on a first track of the plurality of tracks if the speech signal is approximately periodic or to determine a second pulse position from the plurality of candidate pulse positions on a second track of the plurality of tracks if the speech signal is approximately non-periodic, and wherein the algorithm is further configured to define a third pulse position from the plurality of candidate pulse positions on an additional track of the plurality of tracks based on the first pulse position if the speech signal is approximately periodic or the second pulse position if the speech signal is approximately non-periodic.

25. (Previously Presented) The system according to claim 24 where the algorithm uses a pitch prediction contribution to derive a reference position of a main peak from a previously encoded speech signal to define the first pulse position based on the reference position.

26. (Previously Presented) The system according to claim 25 where the algorithm defines the first or the second pulse position based on the reference position.

27. (Previously Presented) The system according to claim 26 where the algorithm further includes an energy measure algorithm to derive one or more additional main peaks.

28. (Previously Presented) The system according to claim 27 where the energy measure algorithm defines the main peak at the position of the pitch prediction contribution including the highest energy.

29. (Currently Amended) A speech coding system for encoding a speech signal, the speech coding system comprising:

an encoder that determines a plurality of candidate pulse positions for encoding an excitation signal, wherein the plurality of candidate pulse positions are divided among a plurality of tracks; and

an algorithm for execution by the encoder;

wherein the algorithm is configured to determine a first pulse position from the plurality of candidate pulse positions on a first track of the plurality of tracks if the speech signal

~~is approximately periodic, and wherein the algorithm is further configured to define or to~~
determine a second pulse position from the plurality of candidate pulse positions on a second
track of the plurality of tracks ~~based on the first pulse position~~ if the speech signal is
approximately non-periodic.

30. (Previously Presented) The system according to claim 29 where the algorithm uses a pitch prediction contribution to derive a reference position of a main peak from a previously encoded speech signal to define the first pulse position based on the reference position.

31. (Previously Presented) The system according to claim 20 where the algorithm defines the first pulse position based on the reference position.

32. (Previously Presented) The system according to claim 31 where the algorithm further includes an energy measure algorithm to derive one or more additional main peaks.

33. (Previously Presented) The system according to claim 32 where the energy measure algorithm defines the main peak at the position of the pitch prediction contribution including the highest energy.

34. (Cancelled)

35. (New) The method according to claim 17 further comprising:

determining a first fixed codebook if the speech signal is approximately periodic;

and

determining a second fixed codebook if the speech signal is non-periodic.

36. (New) The method according to claim 19 further comprising:

determining a first fixed codebook if the speech signal is approximately periodic;

and

determining a second fixed codebook if the speech signal is non-periodic.